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Gangrenous Spider Bite in Los Angeles County

(Apparently by Loxosceles Reclusa)

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IN 1957 THE *Loxosceles* spider was shown to cause gangrenous bites in man.[1] Since that time, physicians have reported bites with increasing frequency from the south central and southeastern portions of the country. Until December of 1966, no one had reported cases of *Loxosceles reclusa* bites in the western states. Then a case appeared in San Diego, California, in which there were typical signs of a necrotic spider bite.[7] The two species endemic in California and Arizona, *L. unicolor* and *L. arizonica,* are not known to harm man. Following is a report of another case in California, this one in Los Angeles County.

Report of a Case

A 49-year-old nursery maintenance man was examined at our clinic on complaint of chills and severe pain in the upper portion of the right arm. He said that he had been bitten there by a spider the day before while he was at work, in the South San Gabriel area of Los Angeles County. The spider had been in a shirt that he had left hanging in a garage near the nursery. He killed the spider and, as the bite was not painful, he forgot about the incident until midnight, when chills began.

On examination, the attending physician saw that the arm was swollen and red over an area four inches in diameter at the site of the bite. In

Figure 1.—Site of spider bite on outer surface of upper arm. The central vesicle has been incised. There is a surrounding zone of induration.

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the center of the lesion there was a vesicle and a dark and purpuric area (Figure 1). There were smaller vesicles at the periphery. The bite was thought to be from a common garden spider at the time and the physician incised the vesicle and applied a dressing. He gave the patient injections of penicillin and tetanus toxoid, and dispensed a packet of chlorpheneramine.

When the patient returned the following day with complaints of increasing arm pain, respiratory distress and sharp substernal pain, electrocardiogram and spirometry studies were done. Increased expiratory breath sounds were heard but abated on use of an aerosol bronchodilating agent (Medihaler-iso, Riker). The spirometry tracing confirmed the lessening of bronchospasm. Intramuscular injection of 8 mg of dexamethazone seemed to aid in the relief of symptoms in the chest. Electrocardiographic findings indicative of mild transient cardiac ischemia disappeared the following day. Leukocyte count and differential sedimentation rate and urinalysis were all within normal limits.

As the week progressed, the patient felt pain in the muscles of the right chest wall as well as in the affected arm. Grip in the right hand weakened. The arm now had an area of necrosis in the center of the bite, and some of the surrounding skin was loosening and peeling (Figure 2). Several vesicles had ruptured.

The Los Angeles County Public Health Department entomologist* was consulted as to the possibility that a *Loxosceles* spider might have caused the bite. After seeing the patient, he said that clinically the case certainly typified the descriptions of *Loxosceles* bites. He conducted a search of the nursery but found no specimens of the spider.

By letter the lesion was described to Dr. Frank Perlman of Portland, Oregon, an authority on spider bites. He said that the description fitted the lesions caused by the *Loxosceles reclusa,* and he mentioned the possibility of skin testing for sensitivity to the class *Arachnida* with spider extract, but an attempt to obtain spider venom for skin testing from various antigen supply houses was unfruitful.

When specifically asked whether the arthropod that bit him might have been a tick (for there is a pajaroello tick found in the Southern California area whose bite causes a similar but smaller necrotic lesion[5]), the patient said he was certain it was a spider. He returned for weekly inspection of the lesion for three months, when an eschar (Figure 3) formed and sloughed spontaneously. The cavity was debrided and sutured and healing followed. The pathologist's report on the debrided tissue described an area of fibrin, lymphocytic infiltration and multinucleated giant cells (Figure 4).

The patient returned to work and had no chronic pain or thoracic symptoms.

*William G. Waldron.

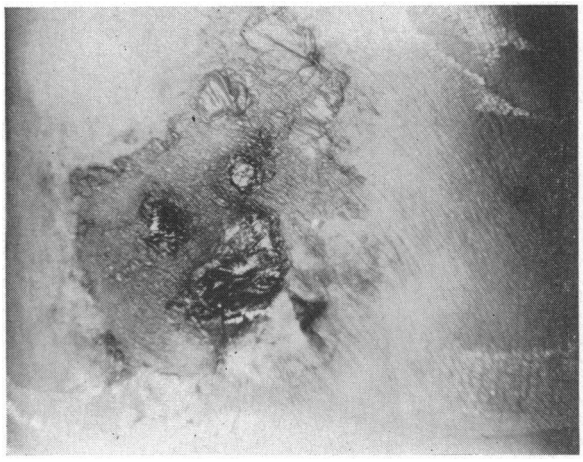

Figure 2.—Central necrosis, same lesion as in Figure 1, a week later. The vesicles have burst and the surrounding skin is beginning to peel.

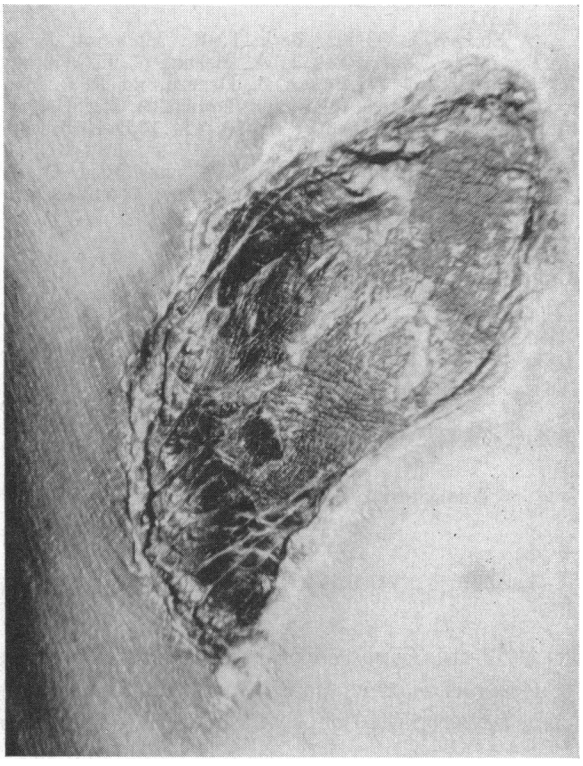

Figure 3.—Two months after the bite an eschar, 2 inches by 4 inches, has formed.

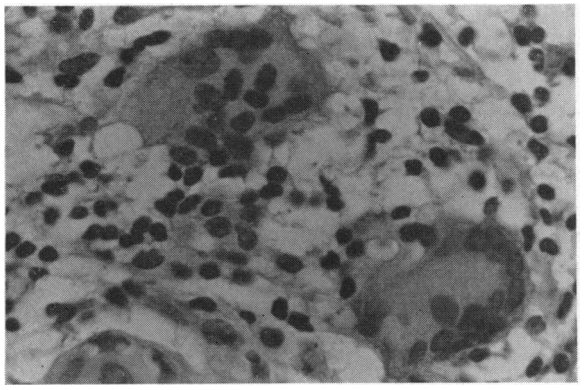

Figure 4.—Biopsy specimen, X600, showing fibrin, lymphocytic infiltration and multinucleated giant cells.

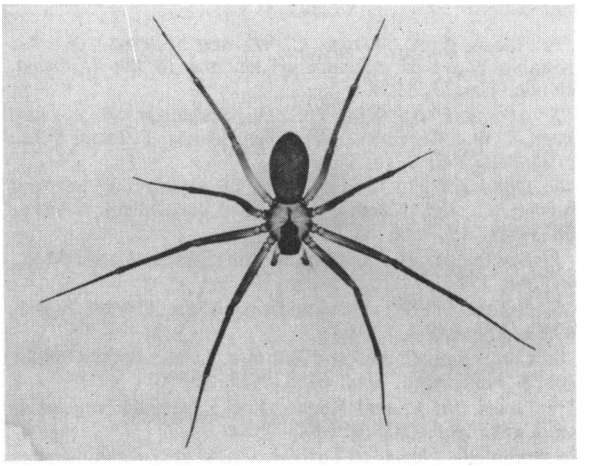

Figure 5.—Loxosceles reclusa spider, shown about twice normal size.

Discussion

The recluse spider, *Loxosceles reclusa,* is light brown and rather smooth. Its legs are proportionally long (Figure 5). The males are 3/8 inch long and 3/16 inch wide, the females slightly larger. A dark band shaped like a violin, which extends from the eyes back to the end of the cephalothorax, helps to identify the species.[3]

The bite of the recluse spider is only slightly painful at first. Later the area becomes swollen and tender and a vesicle appears, surrounded by an area of necrosis. Slow healing leads to an eschar formation which sloughs some weeks to months later and heals by scarring.[2] Animal experiments were done in 1957 which incriminate this species of *Loxosceles* with the necrotic bites. The venom is more toxic than that of the cobra, and is chiefly cytotoxic. As little as 0.5 mcg causes dermal necrosis in rabbits.[8] Other symptoms may be due to release of histamine rather than to direct action of the venom.[5] There is a rare type of loxoscelism associated with hemolysis, jaundice and hemoglobinuria which is now thought to be caused by a host factor.[9]

Treatment

Treatment in the present case with antihistamines and corticoids apparently did not shorten the course of the illness but did provide symptomatic relief. The aerosol bronchodilating agent also was helpful in relieving bronchospastic symptoms. That steroids do not prevent necrosis has been noted before, and experimentally this lack of effect has been found by Dillaha and coworkers[3] to be due to the lapse of time between the bite and the treatment.[3] The same investigators also expressed belief that steroids protect the patient from systemic effects of the venom. In an article in the Medical News section of JAMA, it was suggested that 80 mg of methylprednisolone be injected intramuscularly immediately after the bite, to be followed by the same amount every other day for the first week, then by reductions to 40 mg, 20 mg and 10 mg every other day for the next ten days.[8] It was also advised that for acute systemic reactions the patient be put into hospital and intravenous corticoids (initially a dose of 80 mg of methylprednisolone) be given.

In the present case the choice of debriding and closing rather than attempting skin grafting over the area worked well. Fast removal of the eschar, in some cases, helps speed eventual healing.[6] This may be due to removal of the cytotoxin still in the local site.

Summary

A 49-year-old nurseryman working in the San Gabriel area of Los Angeles County was bitten on the arm by a spider (which he killed). That night he had chills, bronchospasm and thoracic pain. Surrounding the site of the bite was a red, swollen area four inches across, with several vesicles at its center. Within a week, necrosis developed at the site of puncture. Treatment with antihistamines and corticoids relieved the symptoms but did not shorten the course. An eschar formed which sloughed three months later. Debridement and suturing were needed to close the cavity.

From the appearance of the lesion and the nature of the symptoms, the spider in this case is believed to have been *Loxosceles reclusa,* which until recently was unknown in the West.

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Hypothyroidism and Infectious Mononucleosis—An Unusual Association

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INFECTIOUS MONONUCLEOSIS is a generalized disease. Extensive biopsy and autopsy studies indicate there are as many lesions of infectious mononucleosis as there are organs and tissues in the body.[1,2,8] Although it is considered a rare complication, hypothyroidism has been known to follow acute and subacute thyroiditis. In 1961 Mosonyi and Rusvai[7] reported the findings in two patients in whom acute and subacute thyroiditis developed as a complication of infectious mononucleosis. Masked thyroiditis resulting in varying degrees of hypothyroidism may be a more frequent complication of this disease than is generally believed. It could in an occasional patient account for such frequently debilitating symptoms as general malaise, weakness and mental depression which may last for weeks, months and, in some cases, a year or more following an attack of acute infectious mononucleosis.

The purpose of this paper is to report a single case in which the relationship of hypothyroidism and infectious mononucleosis appears more than accidental. In this patient classical hypothyroidism, including myxedema heart, developed.

Report of a Case

A 29-year-old Caucasian male graduate student with no previous history of serious illnesses was seen in the Student Health Service in September 1964 with a history of fatigue, malaise and cervical adenopathy of three weeks' duration. A blood count revealed lymphocytosis with 14 per cent atypical lymphocytes. Heterophile agglutination was 1:1792 or greater. A diagnosis of infectious mononucleosis was made.

In October 1964, because of persistent symptoms, the patient was admitted to hospital. Serum creatinine was elevated to 1.5 mg per 100 ml with creatinine clearance of 90.8 ml per minute. There was no albumin or sugar in a 24-hour specimen of urine. No abnormalities were noted in liver studies. In an x-ray film of the chest, the heart size apeared to be within normal limits (Figure 1). Although there was little improvement, the patient was discharged after five days to convalesce at home.

In November 1964 he was readmitted to hospital because of continued fatigue and malaise and

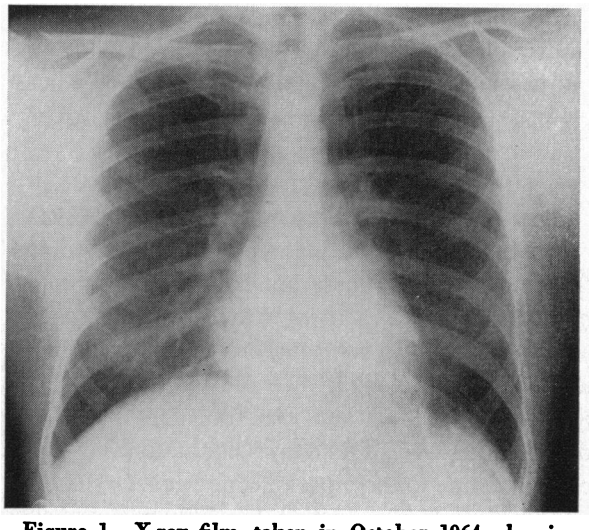

Figure 1.—X-ray film, taken in October 1964, showing size of heart within normal limits.

From the University of California Center for the Health Sciences, Los Angeles.

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